UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,388	07/18/2002	Wolfgang Drobny	10191/2363	2413

26646 7590 04/18/2007

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER	
LUGO, DAVID B	
ART UNIT	**PAPER NUMBER**
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/089,388	DROBNY ET AL.	
	Examiner	Art Unit	
	David B. Lugo	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawing replacement sheet was received on 1/30/07. This drawing replacement sheet is acceptable.

Response to Arguments

2. Applicant's arguments filed 1/30/07 have been fully considered but they are not persuasive.

Regarding claims 12 and 17, Applicant argues that the cited references do not disclose "generating the data to be transmitted via a change in the current flow as data pulses with an inverted pulse half and a non-inverted pulse half" because Rappaport does not disclose changes in current flow with Manchester-coded pulse-edge changes, but only data coding through voltage changes. However, the Examiner respectfully submits that Wallace in combination with Rappaport fairly suggests the limitation.

As indicated in the previous Office action, Wallace discloses transmitting data on a single communication path 20 in one communication direction from a restraint device 16 to the central controller 14 via a change in current flow (col. 4, lines 53-56). Thus, Wallace teaches transmitting data using a current modulation message, as shown in Figure 2 where current signals include an inverted pulse half and a non-inverted pulse half (see bottom of Fig. 2). However, Wallace does not disclose that the pulses of the current modulation message include an inverted pulse half and a non-inverted pulse half where the data is encoded with a pulse-edge change between the pulse halves using Manchester coding. That is, Wallace does not disclose Manchester coding of the pulse halves of the current modulated message of Wallace. However,

Rappaport discloses the use of Manchester coding, as shown Fig. 5.14(c), where two opposite pulse halves are used to represent each binary symbol, the data being encoded during the pulse-edge change, as described on page 225, second paragraph under section 5.4.3 – Line Coding. While Rappaport does disclose data coding through voltage changes, Rappaport is relied upon for the teaching of Manchester coding. In the combination of Wallace with the Manchester coding of Rappaport, it would have been fairly suggested to one of ordinary skill in the art that the Manchester coding disclosed by Rappaport may be applied to the current modulated pulses of Wallace, in order to provide the benefits of easy clock recovery since transitions are guaranteed in every bit period, as stated by Rappaport. That is, Manchester coding may be applied not only to voltage modulated pulses, but also to current modulated pulses, as clock recovery would still be derived transitions from one current level to another.

Accordingly, the rejection of claims 12-21 is maintained.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace et al. U.S. Patent 6,104,308 in view of Rappaport, *Wireless Communications*.

Regarding claim 12, Wallace discloses a method for bidirectional data transmission between at least two devices comprising transmitting data on a single communication path 20 in one communication direction from a restraint device 16 to the central controller 14 via a change

in current flow (col. 4, lines 53-56), transmitting data simultaneously on the communication path 20 in an opposite direction via a change in voltage (col. 4, lines 18-22), and providing the signal communication path by maintaining a single power supply for both communication directions (col. 2, lines 43-50), where a steady minimum voltage level V_L is the normal operating voltage for powering the restraint devices 16 (col. 3, lines 56-57). Wallace does not disclose that the data generated via a change in current flow uses data pulses with an inverted pulse half and a non-inverted pulse half, where the data is encoded with a pulse-edge change between the pulse halves using Manchester coding.

Rappaport discloses the use of Manchester coding, as shown Fig. 5.14(c), where two opposite pulse halves are used to represent each binary symbol, the data being encoded during the pulse-edge change, as described on page 225, second paragraph under section 5.4.3 – Line Coding. It would have been obvious to one of ordinary skill in the art to use Manchester coding as described by Rappaport to code the current modulated data in the system of Wallace because it provides easy clock recovery since transitions are guaranteed in every bit period, as stated by Rappaport.

Regarding claim 13, in one interpretation Wallace shows in Figure 2, a high voltage level V_H, an intermediate voltage level V_L, and a low voltage level 0, where the change in voltage is represented by changing the voltage between the high and intermediate levels (V_H and V_L).

Regarding claim 14, the minimum level of the data transmission is level V_L to provide the required operating voltage for the restraint devices (col. 3, lines 56-57).

Regarding claim 15, in one interpretation Wallace shows in Figure 2, a high voltage level V_H, a low voltage level V_L, where the change in voltage is represented by changing the voltage between the high and low voltage levels (V_H and V_L).

Regarding claim 16, Wallace does not disclose that the data generated via a change in voltage uses data pulses with an inverted pulse half and a non-inverted pulse half, where the data is encoded with a pulse-edge change between the pulse halves using a cyclic code.

Rappaport discloses the use of Manchester coding, as shown Fig. 5.14(c), where two opposite pulse halves are used to represent each binary symbol, the data being encoded during the pulse-edge change, as described on page 225, second paragraph under section 5.4.3 – Line Coding. It would have been obvious to one of ordinary skill in the art to use Manchester coding as described by Rappaport to code the voltage modulated data in the system of Wallace because it provides easy clock recovery since transitions are guaranteed in every bit period, as stated by Rappaport.

Regarding claim 17, Wallace discloses a system for bidirectional data transmission between at least two communication devices comprising a first arrangement 42 for transmitting data on a single communication path 20 in one communication direction from a restraint device 16 to the central controller 14 via a change in current flow (col. 4, lines 53-56), a second arrangement (portion of voltage modulator 30) for transmitting data simultaneously on the communication path 20 in an opposite direction via a change in voltage (col. 4, lines 18-22), a single power supply 24 for both communication directions (col. 2, lines 43-50), operable to provide a constant minimum voltage level V_L is the normal operating voltage for powering the restraint devices 16 (col. 3, lines 56-57). Wallace does not disclose a fourth arrangement for

generating data via a change in current flow with an inverted pulse half and a non-inverted pulse half, and to code the data with a edge change between the pulse halves using Manchester coding.

Rappaport discloses the use of Manchester coding, as shown Fig. 5.14(c), where two opposite pulse halves are used to represent each binary symbol, the data being encoded during the pulse-edge change, as described on page 225, second paragraph under section 5.4.3 – Line Coding, where the encoder used to code the signals is considered a fourth arrangement. It would have been obvious to one of ordinary skill in the art to use Manchester coding as described by Rappaport to code the current modulated data in the system of Wallace because it provides easy clock recovery since transitions are guaranteed in every bit period, as stated by Rappaport.

Regarding claim 18, in one interpretation Wallace shows in Figure 2, a high voltage level V_H, and a low voltage level V_L, where the change in voltage is represented by changing the voltage between the high and low voltage levels (V_H and V_L), and the portion of the voltage modulator that provides the voltage level change is considered to be a third arrangement. Wallace does not state that a separate power supply is used for each of the communication directions. However, it is well known in the art to provide separate power supplies for separate devices in a communications system. It would have been obvious to one of ordinary skill in the art to use separate power supplies as opposed to a single power supply as a matter of design consideration, as the communication functions of the devices will not be considerably altered when separate power supplies are used.

Regarding claim 19, in one interpretation Wallace shows in Figure 2, a high voltage level V_H, an intermediate voltage level V_L, and a low voltage level 0, where the change in voltage is represented by changing the voltage between the high and intermediate levels (V_H and V_L), and

the portion of the voltage modulator that provides the voltage level change is considered to be a third arrangement.

Regarding claim 20, Wallace does not disclose a fifth arrangement for generating data via a change in voltage level with an inverted pulse half and a non-inverted pulse half, and to code the data with a edge change between the pulse halves using a cyclic code.

Rappaport discloses the use of Manchester coding, as shown Fig. 5.14(c), where two opposite pulse halves are used to represent each binary symbol, the data being encoded during the pulse-edge change, as described on page 225, second paragraph under section 5.4.3 – Line Coding. It would have been obvious to one of ordinary skill in the art to use Manchester coding as described by Rappaport to code the voltage modulated data in the system of Wallace because it provides easy clock recovery since transitions are guaranteed in every bit period, as stated by Rappaport.

Regarding claims 21 and 22, the code disclosed by Rappaport is a Manchester code.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David B. Lugo

David B. Lugo
Patent Examiner

4/15/07